OBSTETRICS

UNDER THE CHARGE OF

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Concealed Hemorrhage Complicating Pregnancy.—WILLSON (*Surg., Gynec. and Obst.*, 1922, **34**, 57) describes a case of albuminuria and edema in a pregnant hospital patient, from whom a clear history could not be obtained. After a gestation period of about seven months, there was a shoulder presentation and heart sounds could be made out on the right side of the abdomen, comparatively low. On estimating the size of the mother, it was found that the pelvis was a little under the average. The patient was admitted to the hospital for the treatment of toxemia and grew considerably better. When labor came on, uterine contractions were vigorous, and after several hours of labor there was vaginal hemorrhage with vomiting, nausea and epigastric pain. This became very severe, with tenderness on palpation, and shock and hemorrhage, which steadily increased, and there was pronounced pain on palpating the abdomen, and when the uterus was palpated it did not relax but seemed to be in tonic contraction. The size and location of the child could not be made out but a presenting part seemed to be at the brim of the pelvis. It was impossible to hear the heart sounds. There was no evidence of labor, no dilation of the cervix, and on introducing the finger a placenta could not be felt. It seemed evident that the placenta was more or less loosened. Section was undertaken as soon as possible, and on opening the abdomen a serous, bloody fluid was found in abundant quantity. The appearance of the uterus was unusual, as it was dark bluish-black in color, with areas of different appearance; this abnormality being most pronounced at the left upper portion. On examining the uterus more carefully both anterior and posterior walls presented this unusual condition. Extending in a longitudinal direction there were depressions in the uterus where the muscular tissue had separated without involving the peritoneum. There seemed to be no abnormality in the ovaries and tubes. When the uterus was incised on the left side, the afterbirth was found in front and loosened from its attachment, so that but two-thirds of the placenta was still attached. There were several pints of fluid blood in the uterine cavity and a considerable quantity of clot. It was possible to extract through the abdominal wound the entire fetal mass without rupturing the membranes. The operator did not perform a hysterectomy, and as the patient showed some shock, salt solution was given hypodermically. Unfortunately abortion was unsuccessful and had been undertaken too late, the patient surviving but a few hours. A postmortem examination revealed considerable change in the substance of the liver, which was less firm and lighter in color than the average. The gall-bladder, bowels and stomach seemed normal, but there was some softening in the spleen. The kidneys resembled the liver in the lighter color and softer consistency. The tubes and ovaries were normal, but over the surface of the utervs, under the peritoneal covering, blood had extravasated and a similar condition was present in the left broad ligament. On sectioning the uterus, its muscle was found entirely lacking in tone and firmness, and there were degenerated areas between the individual muscle fibers. On microscopic examination of the liver lobules, necrosis had advanced to a considerable degree in the center of each lobule. This was shown by the staining and by beginning fatty degeneration. A similar process had involved the kidneys and also the uterine muscle. In the latter, blood had been exuded in considerable quantity amid the muscle fibers. On gross examination there was nothing abnormal in the placenta. In the villi hyaline degeneration was present in no very marked degree. In addition to and including his own, the author reports 69 cases. The theory that concealed hemorrhage and separation of the placenta arise from mechanical violence to the uterus, he discards, nor does he accept uterine distention or hyperemia of the wall of the uterus as a sufficient cause for separation of the placenta. The theory that failure of the uterus to permit escape of blood causes placental separation is not adequate. For some time there has been developing a tendency on the part of obstetricians to consider the toxemia of pregnancy as the essential element in producing the condition under discussion. If we are to rely upon the teaching of pathology, there is a remarkable likeness between the condition of the tissues in these cases and that seen in the bodies of animals dying from the bites of serpents. It has long been known that in many patients eclampsia has preceded accidental hemorrhage. Hence, it is at once suggested that an important factor is common to both and that high blood-pressure may be a common cause. So far as the recovery of the patient is concerned, there must always be a considerable mortality and morbidity. The writer gives a death-rate of 38 per cent in 50 patients under observation, in whom he made a diagnosis before operation of the condition. A complication so grave must greatly increase the chance of fetal death, and in 67 cases under the observation of the writer the mortality was 92.5 per cent. It must not be concluded that death inevitably follows the accidental separation of the placenta in all cases, nor that all patients who have this complication require abdominal section. Where, however, there is evidence of considerable disturbance in the patient's pulse, temperature and respiration, operation should be done as soon as possible. The majority of observers agree that Cæsarean section is the preferable operation. Hysterectomy should never be done unless the conditions present imperatively demand it and the preservation of the uterus would increase the risk to the mother's life. Many of these cases show a tendency to continue to bleed after the uterus has been emptied. In many others there must be a supposition that infection is present. Under these circumstances the operation known as the Porro hysterectomy is safest. The writer's study of the subject has led him to believe that what he terms apoplexy of the uterine and placental tissues results from the abundant discharge over the endometrium and in the substance of the uterus of a toxic material which forms during hemorrhage. This substance seems to be produced by the placenta and hence the tissues at the site of the placenta are most often attacked. That variety of bleeding which sometimes occurs, and in which it may be impossible positively to demonstrate the cause of the complication, is considered by the writer to be a part of the same process. In many cases so badly weakened is the wall of the uterus by these toxins that bleeding occurs into the abdominal cavity, and also from the uterus after it has been emptied. In those cases where the complication develops rapidly without dilatation of the cervix or labor, and where evidently the bleeding is severe, there is no choice of method but Cæsarean section, with total extirpation of the uterus or hysterectomy, as indicated.

The Condition of the Membranes and Especially the Epithelia of the Amnion in Cases of Premature Rupture of the Membranes.—HEINLEIN (*Monatsschr. f. Geburtsh.*, 1922, 56, 237) alludes to an account, already published, giving the examination of the membranes in cases of premature rupture where it seemed evident that a violent inflammation of the amnion and chorion, causing necrobiosis, was possibly the cause of the premature rupture. Cervical endometritis was evidently the cause of the inflammation preceding the rupture of the membranes. The writer has studied 27 cases of premature rupture of membranes, and 12 cases of membranes ruptured at the usual time, to observe the microscopic condition in both: His investigations came practically to the same conclusion as those already quoted. In the 27 cases there was an active inflammation of the membranes with destruction of cells in 5 cases. The process was less active and severe in 9, but feebly developed in 4; while there was considerable hemorrhage in the deeper layers of the membranes, with or without inflammation, in 7 cases. In 2 cases no pathological condition could be found, although there was a considerable deposit of cellular material, which made it hard to find the site of the rupture. It is important to find the point of rupture, because the pathological process is most active at that point. As one proceeds further away from the point of rupture in the membranes the pathological process becomes more or less indistinct. This seemed to disappear in the vicinity of the placenta where the membranes join the afterbirth. Only in those cases where the primary rupture of the membranes occurred near the border of the placenta did the characteristic pathological changes appear, and occasionally this inflammatory process attacked a small portion of the placenta. A genuine inflammation of the placenta with small cell infiltration, in or between the villi, was not observed. The writer recognized the amnion and the layer of cells beneath the chorion,. which often contains degenerate villi and other remains of the decidua. Where inflammation was most pronounced the structure of the membranes could not be made out, and the tissues normally present were replaced by small homogeneous masses without nuclei. At other portions necrosis was evidently present with round-cell infiltration and leukocytes and the epithelium of the amnion had practically disappeared. The degree of necrosis depended upon the violence of the inflammation. Where the inflammation was but slight its site was in the tissues between the amnion and chorion. Bleeding was present in a few cases only, and in some where hemorrhage was most copious there was no evidence of inflammation. The site of bleeding was usually the decidua. Near the tissue the bloodvessels were dilated and increased, and the walls of the vessels were so thinned that in some places they could not be recognized. The blood made its way between the layers of the membranes. In some cases blood pigment was present, but this is sometimes seen in normal cases. In some cases of inflammation of the chorion and amnion, these were attacked before the epithelium of the amnion was inflamed. In other cases masses of granular material were found above the epithelium of the amnion; the cells were not only greatly altered but in some places had disappeared with the development of cylindrical epithelium in masses with wide spaces between. Where necrosis occurred the nuclei had disappeared and the form of the epithelial cells could not be made out. In 25 of the 27 cases in which the membranes had ruptured prematurely there was a very essential change in the membranes. This change was an inflammation (recent or of some duration) with a necrotic process often accompanied by hemorrhage, hemorrhage being sometimes present without inflammation. This process was usually seen in the layers underneath the chorion, while hemorrhage usually occurred in the decidua. In all cases the epithelium of the amnion was affected. It seems evident that these changes in the membranes have something to do with premature rupture and that the integrity of the amnion depends upon the condition of its epithelium. The epithelial cells are usually firm and resisting and influence the formation of the fibers of the amnion. It will be remembered that the amnion has no bloodvessels and that it is nourished from the deeper tissues beneath. If a pathological process attacks these deeper tissues the epithelium of the amnion will immediately suffer, the fibers of the amnion are not properly formed and the membranes will rupture without especial violence. One can readily appreciate that, if the membranes rupture sometimes before delivery, bacteria may make their way into the uterus and set up an inflammation of the membranes; but in some cases the time between the rupture of the membranes and delivery is too short for these changes to occur. The changes in the membranes must have taken place by some previous process. In a case of abortion at four months the embryo was removed with unruptured membranes from the uterus. Microscopic examination of the membranes showed a severe inflammation throughout the entire membranes with extensive necrosis. As to the existence of a previous endometritis the writer is unable to make a positive statement. As slight inflammation of the decidua is often found in membranes otherwise normal, what the element is which extends this inflammation to the layer between the chorion and amnion is not clear. An inflammation of the placental substance itself with small-cell infiltration and infiltration between the villi of the chorion could not be clearly demonstrated in any case.

GYNECOLOGY

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Action of Salicylates on the Uterus.—Many text-books of pharmacology mention that abortion sometimes occurs during the treatment of acute rheumatism with salicylates, but that it is uncertain which of these factors is the cause. Therefore in order to determine more definitely the relationship existing between the drug, the disease and abortion, Gunn and Goldberg (*Jour. Pharmacol. and Exper. Therap.*, 1922, **19**, 207) performed experiments which showed that salicylate of soda has a definite stimulating action on the uterus, but that this action is not powerful; for instance, on the isolated uterus it is only half as strong as sodium carbonate and possibly less than one-fortieth as strong as quinine hydrochloride. It was noticed that when large doses were gradually introduced into the blood, as occurs when salicylates are given therapeutically by mouth, the stimulation of the uterus was much less marked. The stimulation did not appear to these investigators to be so pronounced as to suggest that it is likely to be of any great importance in the production of abortion, however, when salicylates are administered clinically very wide variations are found in the amounts given before toxic symptoms appear, and it is not impossible that there may also be considerable differences in the amounts necessary to influence the uterus. Acute rheumatism is practically universally treated with salicylates and these investigators conclude that if salicylates had a greater abortifacient action than their experiments show, the incidence of abortion in rheumatic fever would be greater than it is. In fact since the effect of salicylates is so apparent on rheumatic fever and so slight on the uterus, it is possible that the reason why fewer miscarriages are seen in rheumatic fever than in the other acute fevers is because of the rapid control of the former by sodium salicylate.

Effect of Radiation on the Blood.—The results of the analysis of the experiments performed by Levin (*Am. Jour. Roentgenol.*, 1922, **9**, 112) to determine the action of radium and roentgen rays on the blood and